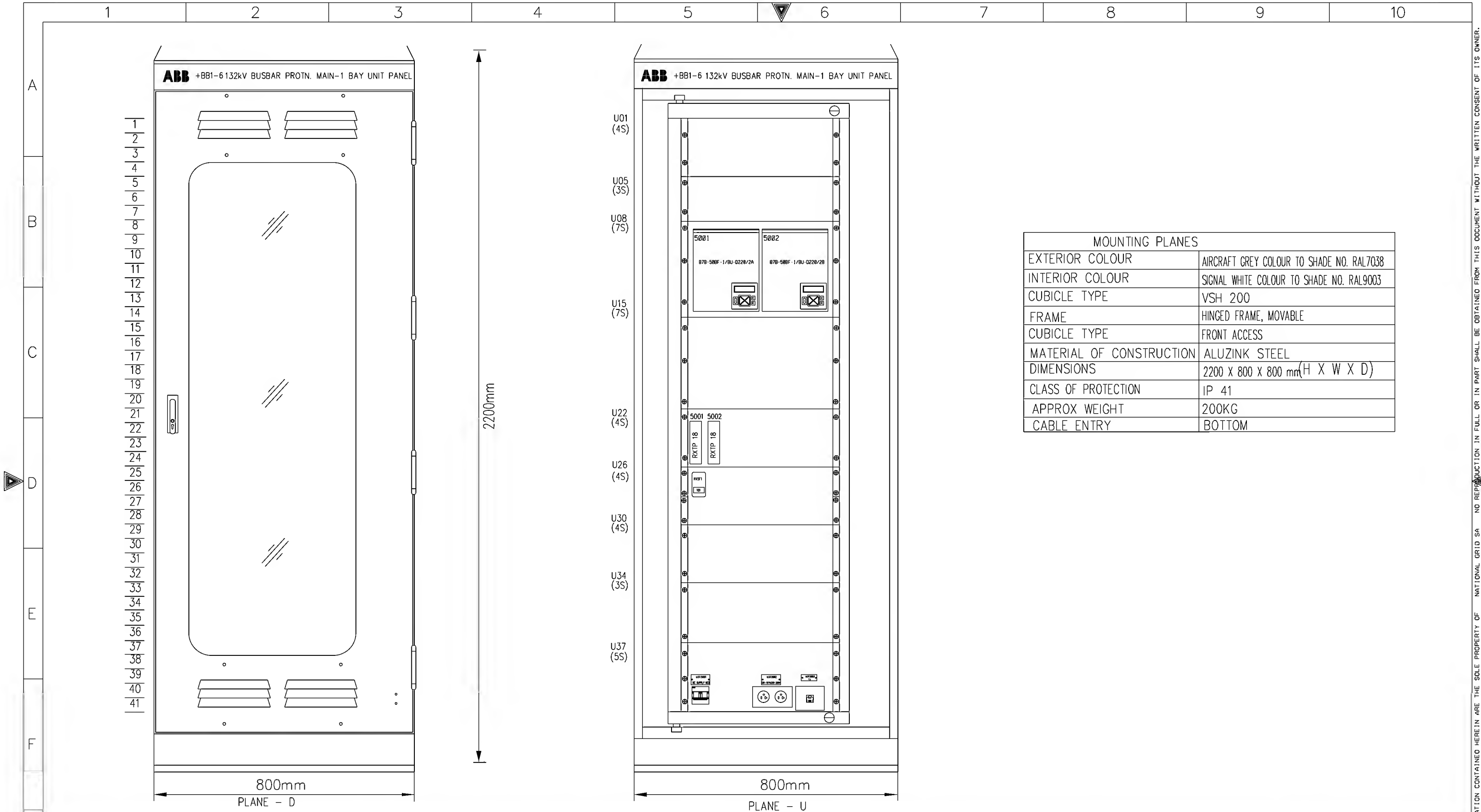
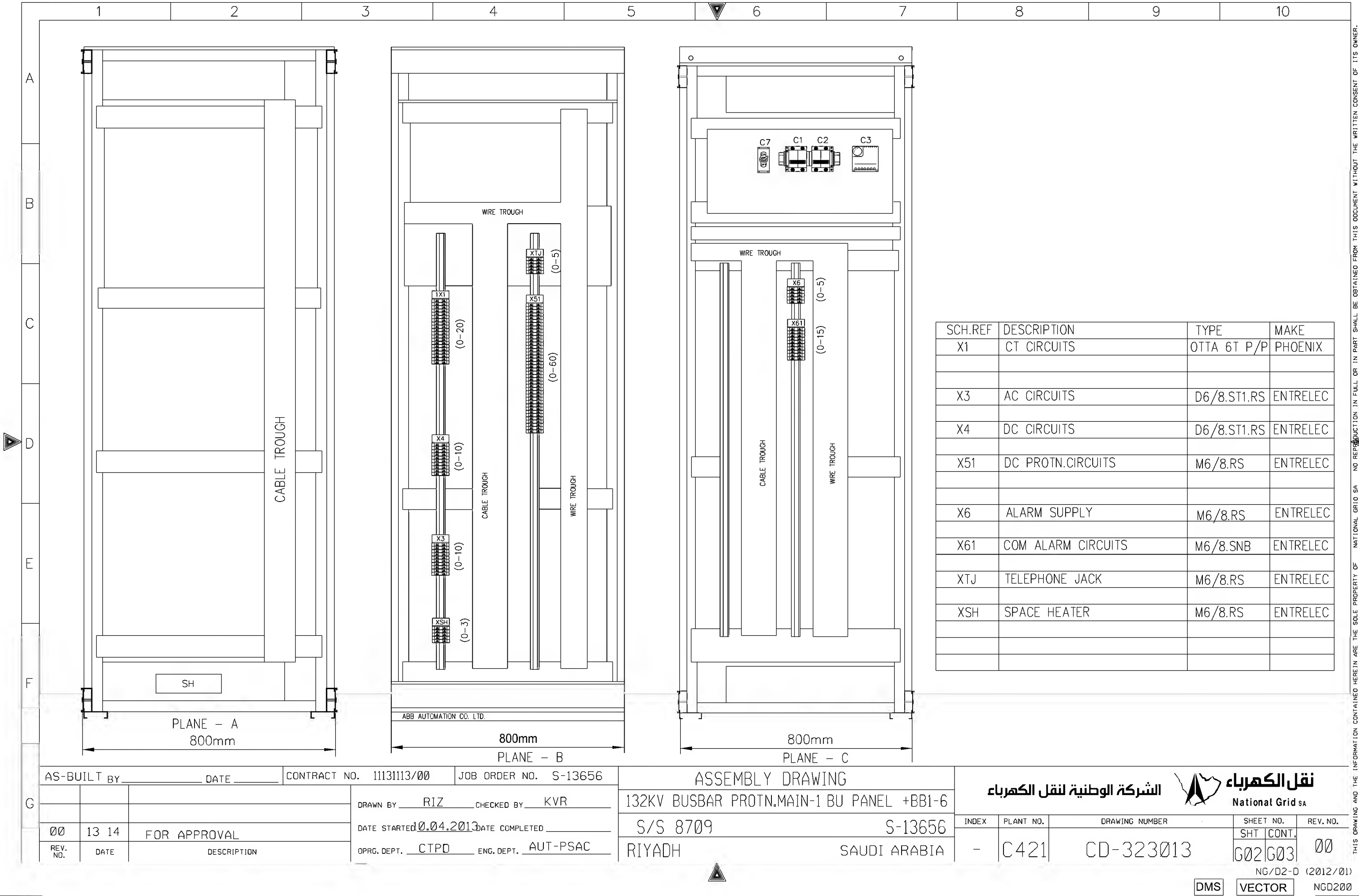


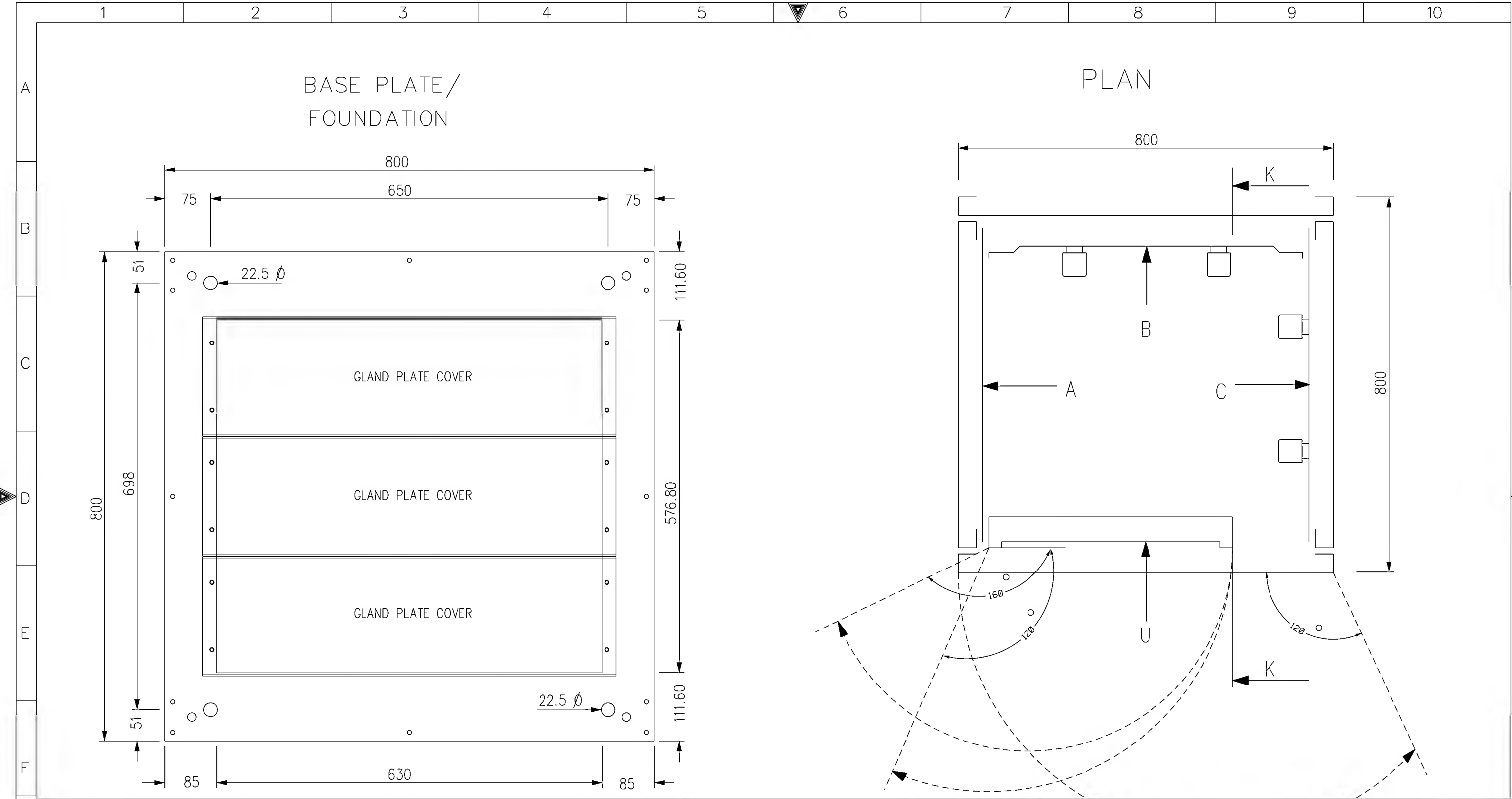
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A	<div><div>ABB</div><div>POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656</div></div>						
B							
C	CLIENT : SAUDI ELECTRICITY COMPANY CENTRAL OP						
D	CONTRACTOR : ABB Contracting Co						
E	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 87						
F	SUBSTATION : S/S 8709						
	CONTRACT NO. : 11131113/00						
	TITLE : Assembly Drawing – +BB1-6 [132KV BUSBAR PROTECTION MAIN-1 BA						
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET
			DRAWN BY RIZ CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
	00	13 14	FOR APPROVAL		DATE STARTED 10.04.2013 DATE COMPLETED _____		S/S 8709 S-13656
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA



MOUNTING PLANES	
EXTERIOR COLOUR	AIRCRAFT GREY COLOUR TO SHADE NO. RAL7038
INTERIOR COLOUR	SIGNAL WHITE COLOUR TO SHADE NO. RAL9003
CUBICLE TYPE	VSH 200
FRAME	HINGED FRAME, MOVABLE
CUBICLE TYPE	FRONT ACCESS
MATERIAL OF CONSTRUCTION	ALUZINK STEEL
DIMENSIONS	2200 X 800 X 800 mm(H X W X D)
CLASS OF PROTECTION	IP 41
APPROX WEIGHT	200KG
CABLE ENTRY	BOTTOM

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		ASSEMBLY DRAWING		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>	
			DRAWN BY RIZ CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		S/S 8709 S-13656			
00 13 14 FOR APPROVAL			DATE STARTED 10.04.2013 DATE COMPLETED _____		RIYADH SAUDI ARABIA		INDEX - PLANT NO. C421 DRAWING NUMBER CD-323013 SHEET NO. SHT G01 CONT. G02 REV. NO. 00			
REV. NO. DATE DESCRIPTION			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC				NG/D2-D (2012/01)		DMS VECTOR NGD200	





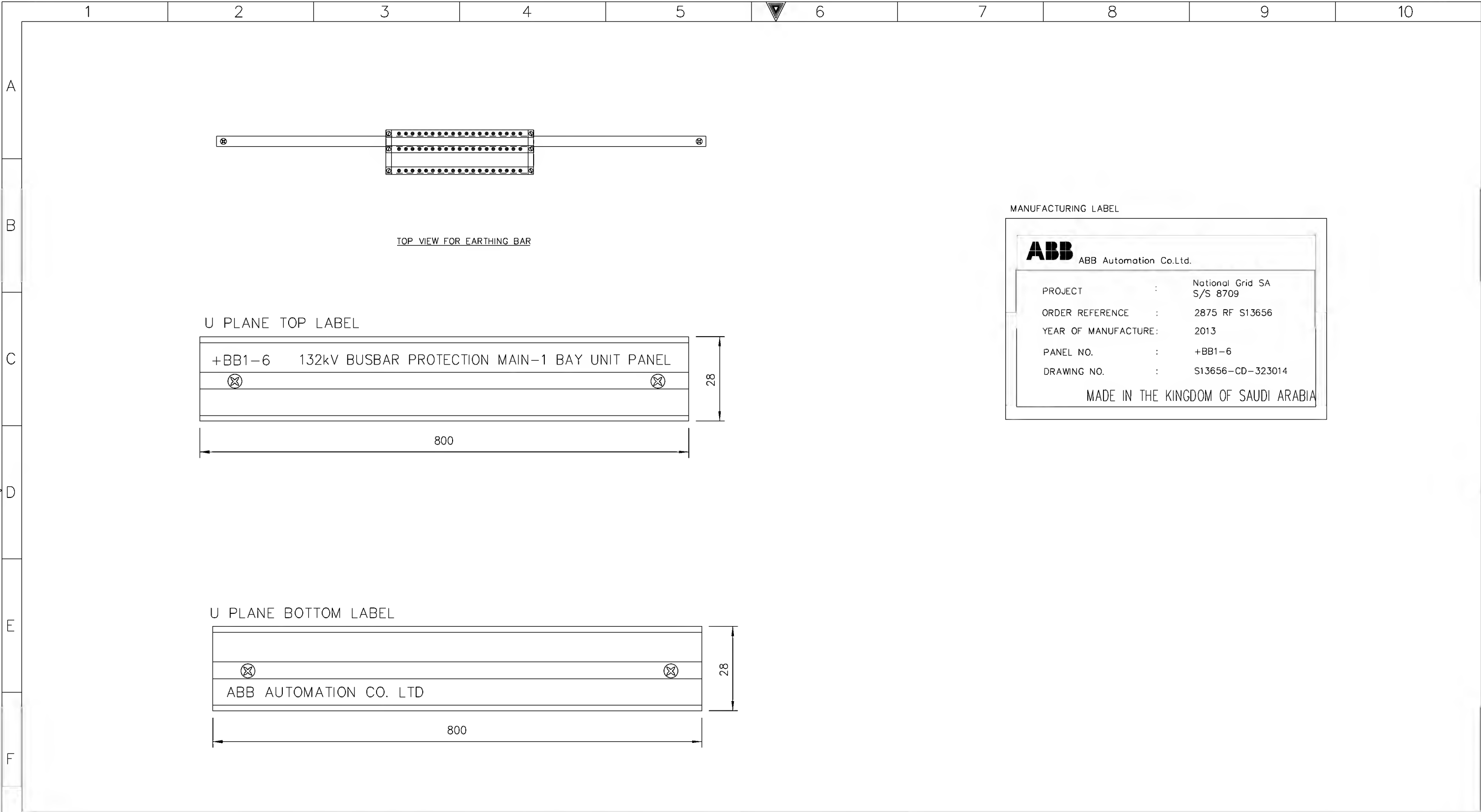
AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

00	13 14	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

DRAWN BY RIZ	CHECKED BY KVR
DATE STARTED 10.04.2013	DATE COMPLETED
OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

ASSEMBLY DRAWING	
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء		
				National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
-	C421	CD-323013		SHT	CONT.	00
				G03	G04	



MANUFACTURING LABEL

ABB ABB Automation Co.Ltd.

PROJECT : National Grid SA
S/S 8709

ORDER REFERENCE : 2875 RF S13656

YEAR OF MANUFACTURE: 2013

PANEL NO. : +BB1-6


DRAWING NO. : S13656-CD-323014


MADE IN THE KINGDOM OF SAUDI ARABIA

G

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
			DRAWN BY RIZ		CHECKED BY KVR	
00	13 14	FOR APPROVAL	DATE STARTED 10.04.2013		DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC	

ASSEMBLY DRAWING					
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6					
S/S 8709			S-13656		
RIYADH			SAUDI ARABIA		

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء	
				National Grid SA	
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	
-	C421	CD-323013		SHT	CONT.
				G04	L00
				00	

	1	2	3	4	5	6	7	8	9	10
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A		
B										
C	CLIENT : SAUDI ELECTRICITY COMPANY CENTRAL OPERATING AREA									
	CONTRACTOR : ABB Contracting Co									
D	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY									
	SUBSTATION : S/S 8709									
E	CONTRACT NO. : 11131113/00									
F	TITLE : LIST OF APPARATUS - +BB1-6 [132KV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL]									

G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656	COVER SHEET		 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa				
			DRAWN BY RIZ	CHECKED BY KVR	132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6						
			DATE STARTED 10.04.2013	DATE COMPLETED _____	S/S 8709 S-13656		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
	00	13 14	FOR APPROVAL	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC	RIYADH SAUDI ARABIA	-	C421	CD-323013	L00L01	00
		REV. NO.	DATE	DESCRIPTION							

NG/D2-D (2012/01)
DMS VECTOR NGD200

	1	2	3	4	5	6	7	8	9	10		
A												
B	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N			SHT.	QTY.	TYPE	MAKE	ORDER INFORMATION	
	1	U08.5001	87B+50BF-1/BU-D220/2A	RELAY CUBICLE- +BB1.6 ACCOMODATING THE FOLLOWING			293	2	REB 500	ABB	REB500-BU03-V7-C1	
	2	U08.5002	87B+50BF-1/BU-D220/2B	BAY UNIT FOR NUMERICAL BUSBAR PROTECTION WITH FOLLOWING			295				-A45-P1-F1-BB1-100-	
				HIGH TROUGH-FAULT STABILITY EVEN IN CASE OF CT SATURATION.							R0-OC1-BFP1-EFP1-	
				NEUTRAL CURRENT CRITERION INSTANTANEOUS VALUES FOR FAULT RECORDING.							PD0-DR0-L0-T0	
				DISTURBANCE FREE AND FAST DATA TRANSFER TO & FROM CENTRAL UNIT								
				PHASE SEGREGATED MEASUREMENT								
				REDUCE CT PERFORMANCE REQUIREMENTS								
				BUILT IN HUMAN MACHINE INTERFACE								
				BUILT IN BREAKER FAILURE FUNCTION.								
C				END FAULT PROTECTION FUNCTION								
				REDUNT POWER SUPPLY								
				DISTURBANCE RECORDER								
				(1.5SCE @ 2.4KHZ) PER BAY UNIT								
				BINARY INPUT : 20								
				BINARY OUTPUT : 16								
				FULLY NUMERICAL SIGNAL PROCESSING								
				RATED CURRENT : 1/5A								
				AUX. VOLTAGE : 48-250V DC								
				RATED FREQUENCY : 60HZ								
D	3	U22.5001	TS-1	TEST SWITCH FOR REB500-BU RELAY (87B+50BF-1/BU-D220/2A)			294	1	RTXP18	ABB	RK 926 115-AH	
	4	U22.5002	TS-2	TEST SWITCH FOR REB500-BU RELAY (87B+50BF-1/BU-D220/2B)			296	1	RTXP18	ABB	RK 926 115-AH	
	5	U26.101	74BF-1/D220	DUAL TARGET RELAY REVERSE FLAG			235	1	RXSF 1	ABB	RK 271 019-AN	
				" BF1 DC SUPPLY FAIL" FOR D220/2A & 2B								
				CONTACT DATA : 1NO + 2NC PER COIL								
E												
F												
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS				الشركة الوطنية لنقل الكهرباء National Grid sa	
			DRAWN BY RIZ CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6							
			DATE STARTED 04.2013 DATE COMPLETED _____		S/S 8709 S-13656		INDEX		PLANT NO.		DRAWING NUMBER	
	00 13 14 FOR APPROVAL		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		-		C421		CD-323013	
	REV. NO. DATE DESCRIPTION										SHEET NO. REV. NO.	
											SHT CONT.	
											L01 L02 00	
NG/D2-D (2012/01) DMS VECTOR NGD200												

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D										
E										
F										

LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
U08.5001	U08.5001 87B+50BF-1/BU-D220/2A	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U08.5002	U08.5002 87B+50BF-1/BU-D220/2B	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U22.5001	U22.5001 TS-1	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U22.5002	U22.5002 TS-2	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U26.101	U26.101 74BF-1/D220	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U37.5001	U37.5001 DC SUPPLY MCB FOR D220	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U37.5002	U37.5002 C01-127V,C02-220V	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U37.5003	U37.5003 TJ	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS		الشركة الوطنية لنقل الكهرباء National Grid sa				
			DRAWN BY RIZ CHECKED BY KVR			132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
00	13 14	FOR APPROVAL	DATE STARTED 0.04.2013 DATE COMPLETED _____			S/S 8709 S-13656					SHT	CONT.	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC			RIYADH SAUDI ARABIA		-	C421	CD-323013	L04	L05	00

A

B

C

D

E

F

G

LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
C1	C1 127V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C2	C2 220V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C3	C3 THERMOSTAT	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C7	C7 ON/OFF SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
DS	DS DOOR SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
IL	IL ILLUMINATION LAMP	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
SH	SH SPACE HEATER	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm

AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

00

13 14

FOR APPROVAL

REV. NO. _____ DATE _____ DESCRIPTION _____

DRAWN BY RIZ CHECKED BY KVR

DATE STARTED 10.04.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC


LIST OF APPARATUS

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709 S-13656

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

 **نقل الكهرباء**
National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.


-

C421

CD-323013

L05NIL

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	1	2	3	4	5	6	7	8	9	10
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD. 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A		
B										
C	CLIENT : SAUDI ELECTRICITY COMPANY CENTRAL OPERATING AREA									
	CONTRACTOR : ABB Contracting Co									
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY									
D	SUBSTATION : S/S 8709									
	CONTRACT NO. : 11131113/00									
E	TITLE : SCHEMATICS DRAWINGS - +BB1-6 [132KV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL]									
F										

G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET						
			DRAWN BY RIZ CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6								
	DATE STARTED 10.04.2013 DATE COMPLETED _____		S/S 8709		S-13656		INDEX		PLANT NO.		DRAWING NUMBER		
	00 13 14 FOR APPROVAL		RIYADH SAUDI ARABIA		-		C421		CD-323014		SHEET NO. 000/001		
REV. NO.		DATE		DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC						REV. NO. 00	
NG/D2-D (2012/01) DMS VECTOR NGD200													

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A	<table><thead><tr><th colspan="2">CONTENTS</th><th>ABB SHT.NO.</th><th>REV.00</th><th>REV.01</th><th>REV.02</th></tr></thead><tbody><tr><td colspan="2">COVER SHEET</td><td>000</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">CONTENTS SHEET</td><td>001</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">GRAPHICAL SYMBOLS FOR DIAGRAMS</td><td>011</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">GRAPHICAL SYMBOLS FOR DIAGRAMS</td><td>012</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">COMMON LEGEND</td><td>013</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">FERRULE AND WIRING DETAILS</td><td>014</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">DRAWING REFERENCES</td><td>015</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">DRAWING REFERENCES</td><td>016</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">PRIMARY SYSTEM – D220</td><td>051</td><td>X</td><td></td><td></td></tr></tbody></table>					CONTENTS		ABB SHT.NO.	REV.00	REV.01	REV.02	COVER SHEET		000	X			CONTENTS SHEET		001	X			GRAPHICAL SYMBOLS FOR DIAGRAMS		011	X			GRAPHICAL SYMBOLS FOR DIAGRAMS		012	X			COMMON LEGEND		013	X			FERRULE AND WIRING DETAILS		014	X			DRAWING REFERENCES		015	X			DRAWING REFERENCES		016	X			PRIMARY SYSTEM – D220		051	X			<table><thead><tr><th colspan="2">CONTENTS</th><th>ABB SHT.NO.</th><th>REV.00</th><th>REV.01</th><th>REV.02</th></tr></thead><tbody><tr><td colspan="2">COMMON ALARM CIRCUITS</td><td>292</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">BLOCK REFERENCE 87B+50BF–1/BU–D220/2A</td><td>293</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">BLOCK REFERENCE 87B+50BF–1/BU–D220/2A</td><td>294</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">BLOCK REFERENCE 87B+50BF–1/BU–D220/2B</td><td>295</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">BLOCK REFERENCE 87B+50BF–1/BU–D220/2B</td><td>296</td><td>X</td><td></td><td></td></tr><tr><td colspan="2">TERMINAL BLOCKS REFERENCE</td><td>301</td><td>X</td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td></td><td></td><td></td></tr></tbody></table>					CONTENTS		ABB SHT.NO.	REV.00	REV.01	REV.02	COMMON ALARM CIRCUITS		292	X			BLOCK REFERENCE 87B+50BF–1/BU–D220/2A		293	X			BLOCK REFERENCE 87B+50BF–1/BU–D220/2A		294	X			BLOCK REFERENCE 87B+50BF–1/BU–D220/2B		295	X			BLOCK REFERENCE 87B+50BF–1/BU–D220/2B		296	X			TERMINAL BLOCKS REFERENCE		301	X																				
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NG/D2-D (2012/01)


DMS

VECTOR

NGD200


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C										
D										
E										
F										

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FRAME CONNECTION		MAIN CONTACT OF A CIRCUIT BREAKER		RELAY WITH TWO MAKE CONTACTS, ONE OF THEM DELAYED WHEN OPERATING
	EARTH CONNECTION		PASSING MAKE CONTACT CLOSING MOMENTARILY DURING OPERATION AND RELEASE		RELAY WITH TWO ACTUATORS AND A TWO STABLE POSITIONS
	RESISTOR		BREAK CONTACT DELAYED WHEN OPERATING		SIGNALLING LAMP
	VARIABLE RESISTOR		MAKE CONTACT DELAYED WHEN RELEASING		MECHANICAL INDICATOR WITH AUTOMATIC RESET
	RESISTOR WITH PRESET ADJUSTMENT		TWO MECHANICAL LINKS CROSSING WITHOUT CONNECTION		MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	CAPACITOR		JUNCTION OF MECHANICAL LINKS		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH AUTOMATIC RESET
	SEMICONDUCTOR DIODE USED AS A CAPACITIVE DEVICE		AUTOMATIC RESET		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	OPEN CONTACT, MAKE CONTACT		NON-AUTOMATIC RESET		RELAY WITH MAKE CONTACT
	CLOSED CONTACT, BREAK CONTACT		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH AUTOMATIC RESET		RELAY WITH CHANGE-OVER CONTACT
	CHANGE-OVER CONTACT, BREAK BEFORE MAKE		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH NON-AUTOMATIC RESET		ELECTRO-MECHANICAL POSITION INDICATOR WITH ONE DE-ENERGIZED AND ONE OPERATED POSITION
	MAKE CONTACT WHICH IS EARLY WHEN OPERATING AND LATE WHEN RELEASING		CHANGE-OVER SWITCHING DEVICE WITH MANUAL CONTROL AUTOMATIC RESET FROM POSITION 1-2 TO THE NEUTRAL POSITION		ELECTRO-MECHANICAL POSITION INDICATOR WITH ONE DE-ENERGIZED AND TWO OPERATED POSITION
	BREAK CONTACT WHICH IS LATE WHEN OPERATING AND EARLY WHEN RELEASING		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING		BELL, BUZZER
	SWITCHING DEVICE WITH MANUAL CONTROL		RELAY WITH MAKE CONTACT, DELAYED WHEN RELEASING		SIREN , HORN
	MAKE CONTACT DELAYED WHEN OPERATING		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING AND RELEASING		
	BREAK CONTACT DELAYED WHEN RELEASING				
	MAKE CONTACT DELAYED WHEN OPERATING AND RELEASING				
	MAIN CONTACT OF A SWITCH DISCONNECTOR				
	MAIN CONTACT OF A DISCONNECTOR				

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		GRAPHICAL SYMBOLS FOR DIAGRAMS			الشركة الوطنية لنقل الكهرباء		 نقل الكهرباء National Grid sa			
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>				132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	REV. NO.
			DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____				S/S 8709 S-13656			-	C421	CD-323014		SHT	CONT.
00	13 14	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>				RIYADH SAUDI ARABIA							011	012
REV. NO.	DATE	DESCRIPTION													

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FUSE / LINK		WATTMETER		ELEMENT WITH NEGATED INHIBITING INPUT
	FUSE WITH THE SUPPLY SIDE INDICATED		VARMETER		ELEMENT WITH INPUT WHICH DOES NOT CARRY ANY LOGIC INFORMATION
	SINGLE-PHASE TRANSFORMER WITH TWO SEPARATE WINDINGS (TWO ALTERNATIVE FORMS)		POWER FACTOR METER		ELEMENT WITH POSTPONED OUTPUT
	SINGLE-PHASE TRANSFORMER WITH THREE SEPARATE WINDINGS (TWO ALTERNATIVE FORMS)		POSITION INDICATOR		AND-ELEMENT WITH TWO INPUTS
	SINGLE-PHASE TRANSFORMER WITH FERRO MAGNETIC CORE		SYNCHROSCOPE		OR-ELEMENT WITH TWO INPUTS
	SINGLE-PHASE VOLTAGE TRANSFORMER (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		RECORDING VOLTMETER		LOGIC THRESHOLD ELEMENT WITH FOUR INPUTS AND THRESHOLD VALUE 2
	SINGLE-PHASE VOLTAGE TRANSFORMER WITH TWO SECONDARY WINDINGS (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		RECORDING WATTMETER		ELEMENT WITH THREE INPUTS FOR "2 AND ONLY 2"
	CURRENT TRANSFORMER (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		HOUR METER		EXCLUSIVE OR-ELEMENT WITH THREE INPUTS
	CURRENT TRANSFORMER WITH TWO CORES (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		WATT-HOUR METER		LOGIC IDENTITY ELEMENT WITH THREE INPUTS
	CURRENT TRANSFORMER WITH TWO SECONDARY WINDINGS ON ONE CORE (MULTI-LINE AND SINGLE-LINE REPRESENTATION)		WATT-HOUR METER FOR ENERGY FROM A BUSBAR SYSTEM		MAJORITY ELEMENT WITH THREE INPUTS
	FILTER		ELEMENT WITH STATIC INPUT		NEGATOR
	HIGH-PASS FILTER		ELEMENT WITH STATIC NEGATED INPUT		NAND ELEMENT WITH TWO INPUTS
	BAND-PASS FILTER		ELEMENT WITH STATIC NEGATED OUTPUT		NOR ELEMENT WITH TWO INPUTS
	VOLTMETER		ELEMENT WITH DYNAMIC INPUT		BISTABLE ELEMENT
	AMMETER		ELEMENT WITH DYNAMIC NEGATED INPUT		
			ELEMENT WITH INHIBITING INPUT		

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa	
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		GRAPHICAL SYMBOLS FOR DIAGRAMS			
			DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			
<u>00</u> <u>13 14</u> FOR APPROVAL			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		S/S 8709 S-13656		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO. - C421 CD-323014 SHT CONT. 0012 013 00	
REV. NO. DATE DESCRIPTION					RIYADH SAUDI ARABIA			

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LEGENDS

±R1

±R2

±R3

±IT

FL

BB RS±

BB CBF±/CBF±

DC SUPPLY – MAIN PROTECTION

DC SUPPLY – SECONDARY PROTECTION

DC SUPPLY – BACK UP PROTECTION

DC SUPPLY – INTER TRIP

DC SUPPLY – FLASHING CIRCUIT

DC SUPPLY – BUS BAR – PROTECTION RESET

DC SUPPLY – CBF PROTECTION

R

CR

ECC

LOCAL

REMOTE

RESET BUS – ALARM SYSTEM

CONTROL ROOM

ENERGY CONTROL CENTRE

THE LOCATION OF CONTROLLED DEVICE

ANY OTHER LOCATION NOT LOCAL

ON

OFF

A

T

S

CS

CT

LS

LT

LC

LO

RO

OP

RE

CB NORMALLY OPEN AUXILIARY CONTACT

CB NORMALLY CLOSED AUXILIARY CONTACT

COMMON

TEST POSITION

SERVICE POSITION

CLOSE IN SERVICE POSITION

CLOSE IN TEST POSITION

LOCAL SERVICE

LOCAL TEST

LOCAL CLOSE

LOCAL OPEN

REMOTE OPEN

OPERATE

RESET

NOTES

LABELS

WHITE LABEL WITH BLACK LETTERING WILL BE PROVIDED FOR ALL MOUNTED APPARATUS EQUIPMENT IDENTIFICATION AND FUNCTION REFERENCE LABEL WILL BE PROVIDED FOR FRONT MOUNTED EQUIPMENTS OF THE PANEL AND EQUIPMENT IDENTIFICATION LABEL WILL BE PROVIDED FOR INTERNALLY MOUNTED EQUIPMENTS

WIRING

PVC INSULATED 600V GRADE

2.5 SQ.mm. YELLOW COLOURED FOR CT CIRCUITS

2.5 SQ.mm. RE COLOURED FOR VT CIRCUITS

1.5 SQ.mm. GREY COLOURED FOR DC SUPPLY, SCADA AND CONTROL CIRCUITS

2.5 SQ.mm. BLACK COLOURED FOR AVC AND AC CIRCUITS

2.5 SQ.mm. YELLOW/GREEN COLOURED FOR EARTHING CONNECTIONS

FOLLOWING MARKERS SHALL BE PROVIDED ON FOLLOWING WIRES:

+ SIGN FOR DC + WIRE

– SIGN FOR DC – WIRE


LUGS

A. CT CIRCUITS– RING TYPE

B. OTHER CIRCUITS – SPADE TYPE

FERULLING

YELLO TUBE 3.2 mm FOR 1.5SQ mm WIRES AND 4.2 FOR 2.5 SQ mm WIRES (AS PER 31 – TMSS–1, RE.0)

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COMMON LEGEND			<div>الشركة الوطنية لنقل الكهرباء</div> <div> نقل الكهرباء</div> <div>National Grid sa</div>		
			DRAWN BY RIZ		CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			INDEX		
			DATE STARTED 0.04.2013		DATE COMPLETED		S/S 8709 S-13656			PLANT NO.		
			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA			DRAWING NUMBER		
REV. NO.			DATE		DESCRIPTION					SHEET NO.		
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NG/D2-D (2012/01)

DMS

VECTOR

NGD200

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MANUFACTURER	SCHEMATICS DWG.NO	PANEL DESCRIPTION	PANEL REFERENCE
 PROTECTION & SUBSTATION AUTOMATION		SS 8833 132kV RELAY PANELS	
	CD-290019	132/13.8kV GT-1 RELAY PANEL -1	+R03.1
		132/13.8kV GT-1 RELAY PANEL -2	+R03.2
	CD-290022	132/13.8kV GT-2 RELAY PANEL -1	+R02.1
		132/13.8kV GT-2 RELAY PANEL -2	+R02.2
	CD-290025	132/13.8kV GT-3 RELAY PANEL -1	+R08.1
		132/13.8kV GT-3 RELAY PANEL -2	+R08.2
	CD-290027	132/13.8kV TRANSFORMER-1,2& 3 AVC PANEL	+AVC
	CD-290007	132KV SPARE-1 UGF RELAY PANEL -1	+R05.1
		132KV SPARE-1 UGF RELAY PANEL -2	+R05.2
	CD-290013	132KV 8824A UGF RELAY PANEL -1	+R01.1
		132KV 8824A UGF RELAY PANEL -2	+R01.2
	CD-290016	132KV 8824B UGF RELAY PANEL -1	+R04.1
		132KV 8824B UGF RELAY PANEL -2	+R04.2
	CD-290010	132KV SPARE-2 UGF RELAY PANEL -1	+R06.1
		132KV SPARE-2 UGF RELAY PANEL -2	+R06.2
	CD-290029	132kV BUS COUPLER-A	+R130
	CD-290031	132kV BUS COUPLER-B	+R230
	CD-290033	132kV BUS SECTION	+R120
	CD-290035	132kV BUSBAR PROTECTION MAIN-1 CENTRAL UNIT PANEL	+BB1-4
	CD-290037	132kV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL	+BB1-6
	CD-290039	132kV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL	+BB1-3
	CD-290041	132kV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL	+BB1-4
	CD-290048	132kV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL	+BB1-6
	CD-290091	132kV BUSBAR PROTECTION MAIN-2 CENTRAL UNIT PANEL	+BB2-1
	CD-290093	132kV BUSBAR PROTECTION MAIN-2 BAY UNIT PANEL	+BB2-2
	CD-290095	132kV BUSBAR PROTECTION MAIN-2 BAY UNIT PANEL	+BB2-3
	CD-290097	132kV BUSBAR PROTECTION MAIN-2 BAY UNIT PANEL	+BB2-4
	CD-290099	132kV BUSBAR PROTECTION MAIN-2 BAY UNIT PANEL	+BB2-5

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
			DRAWN BY RIZ	CHECKED BY KVR
00	13 14	FOR APPROVAL	DATE STARTED 10.04.2013	DATE COMPLETED _____
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

DRAWING REFERENCES	
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		 نقل الكهرباء National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323014	SHT 015	CONT. 016
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AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DRAWING REFERENCES			<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>																																																																
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.																																																														
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	REV. NO.	DATE	DESCRIPTION																																																																							

ABB

PROTECTION & SUBSTATION
AUTOMATION

MANUFACTURER	SCHEMATICS DWG.NO	PANEL DESCRIPTION	PANEL REFERENCE
ABB PROTECTION & SUBSTATION AUTOMATION		SS 8833 13.8KV RELAY PANELS	
	CD-290053	13.8KV Capacitor Bank-1 Protection Panel	+CBP-1
	CD-290055	13.8KV Capacitor Bank-2 Protection Panel	+CBP-2
	CD-290057	13.8KV Capacitor Bank-2 Protection Panel	+CBP-3
	CD-290060	13.8 KV ACCS PANEL	+ACCS
	CD-290063	13.8KV ACSE PANEL	+ACSE
	CD-290071	SCMS Interface Panel	+SCMS
	CD-290069	13.8KV Under Voltage Load Shedding Panel	+UVLS
	CD-290065	13.8KV Under Frequency Load Shedding Panel-1	+UFLS01
	CD-290067	13.8KV Under Frequency Load Shedding Panel-2	+UFLS02

AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY KVR

DATE STARTED 10.04.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709 S-13656

RIYADH SAUDI ARABIA

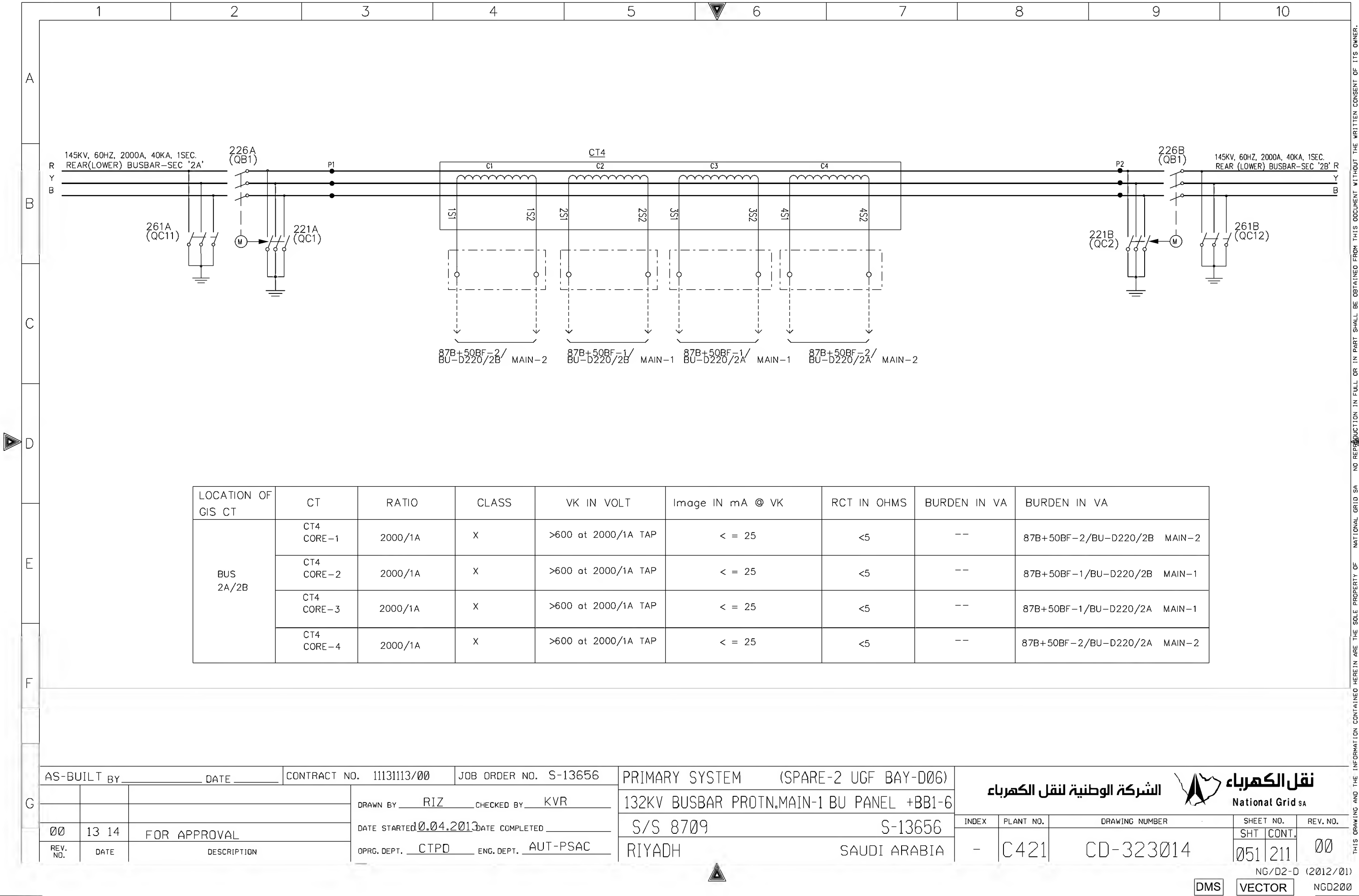
الشركة الوطنية لنقل الكهرباء

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National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323014	SHT 016	CONT. 051
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NG/D2-D (2012/01)
DMS VECTOR NGD200



AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

DRAWN BY RIZ

CHECKED BY KVR

DATE STARTED 10.04.2013

DATE COMPLETED _____

OPRG. DEPT. CTPD

ENG. DEPT. AUT-PSAC

PRIMARY SYSTEM (SPARE-2 UGF BAY-D06)

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



National Grid sa

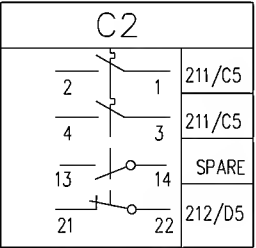
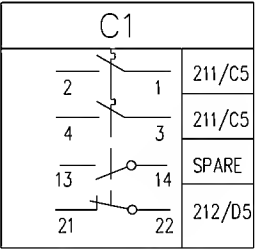
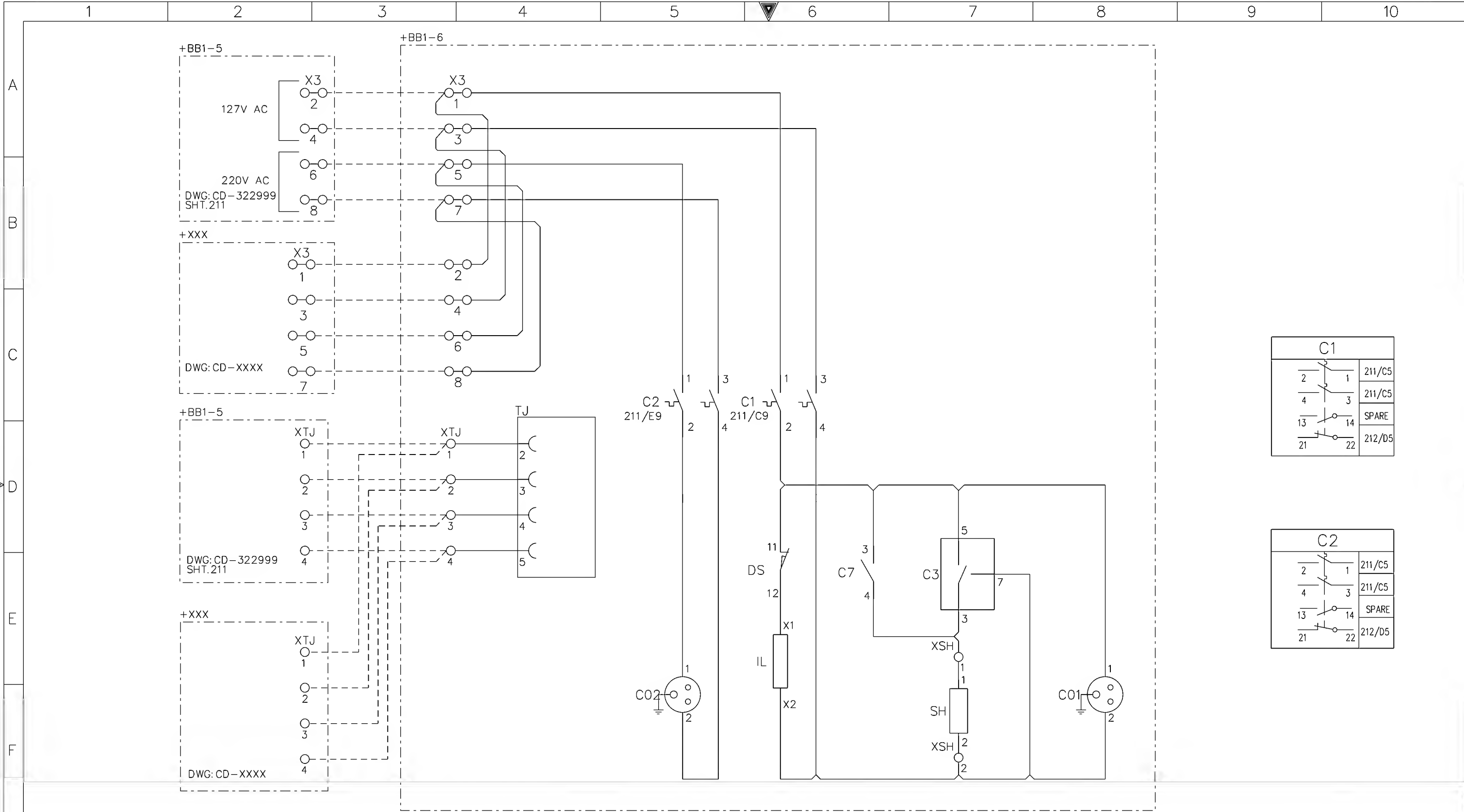
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
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-	C421	CD-323014	051	211	00

NG/D2-D (2012/01)

DMS

VECTOR

NGD200



AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>	
			DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____	
			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>	
00	13 14	FOR APPROVAL		
REV. NO.	DATE	DESCRIPTION		

AC SUPPLY FOR ILLUMINATION & POWER SOCKET
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6
S/S 8709 S-13656
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء
National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
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-	C421	CD-323014	211	212	00

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The diagram illustrates a power distribution system with three main bus sections: +BB1-5, +BB1-6, and +XXXX. Each section contains an X6 busbar and an X61 busbar. The +BB1-6 section is the central hub, connected to the other two sections via X6 busbars. It also contains two circuit breakers, C1 and C2, each with associated isolators 21 and 22. The X61 busbars are connected to the X6 busbars through the circuit breakers and isolators. The diagram is divided into three main areas by dashed lines, each labeled with a bus section name. The bottom of the diagram includes two labels: 'DWG: CD-322999 SHT.212' on the left and 'DWG: CD-XXXXX SHT.212' on the right.

+BB1-5

+BB1-6

+XXXX

X6

X61

C1

C2

21

22


211/C9

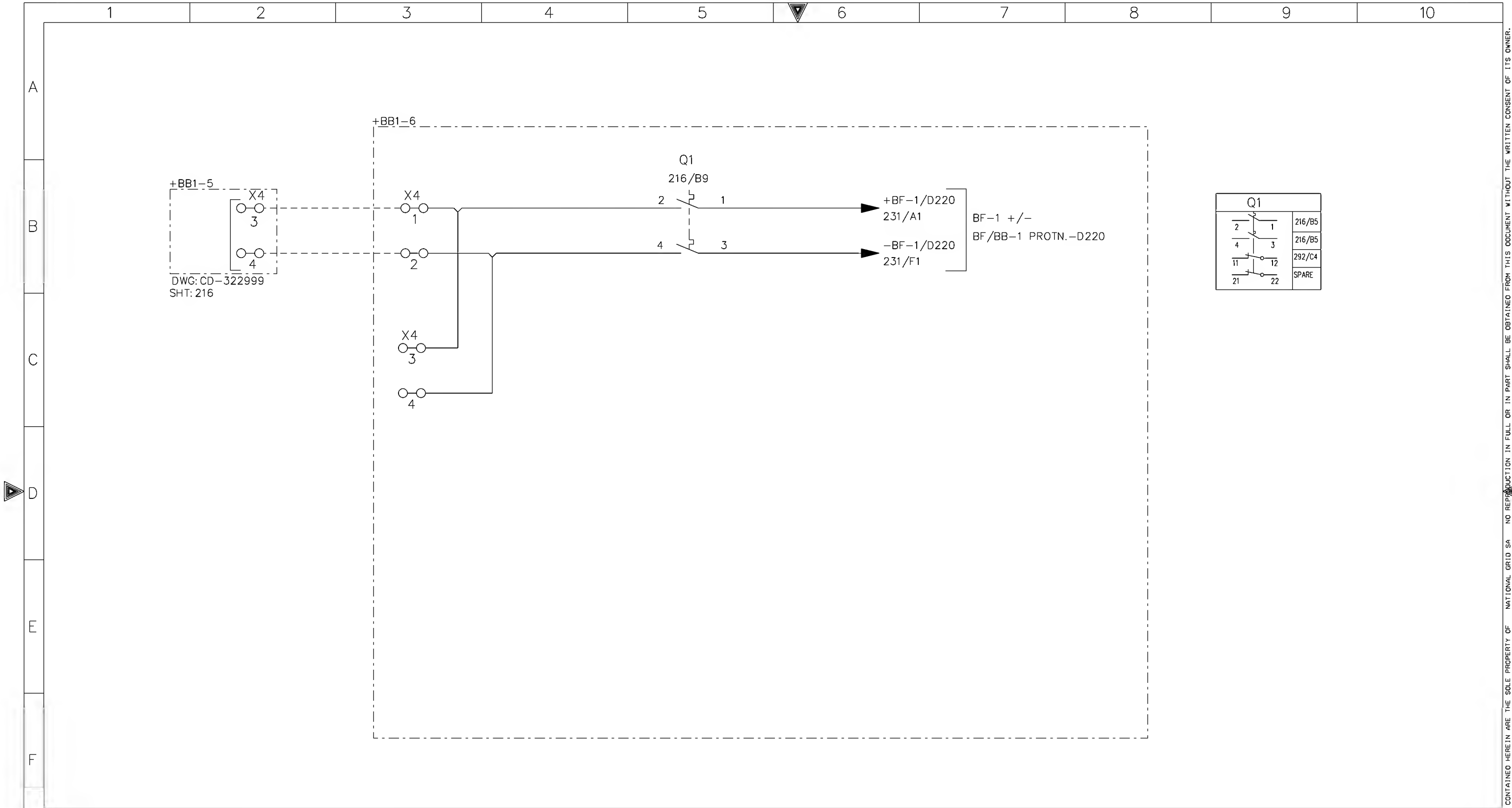
211/E9

DWG: CD-322999
SHT.212

DWG: CD-XXXXX
SHT.212

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		CUB.LIGHTING,HEATER&SOKET ALARM CKT.	
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
<u>00</u>	<u>13 14</u>	FOR APPROVAL		DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____		S/S 8709 S-13656	
REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA	

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء		
				National Grid sa		
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
-	C421	CD-323014		SHT	CONT.	00
				212	216	



AS-BUILT BY

DATE

CONTRACT NO.

11131113/00

JOB ORDER NO.

S-13656

DC SUPPLY DISTRIBUTION

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid SA

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

C421

CD-323014

SHT

CONT.

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NG/D2-D (2012/01)

DMS

VECTOR

NGD200

DRAWN BY

RIZ

CHECKED BY

KVR

DATE STARTED

10.04.2013

DATE COMPLETED

OPRG. DEPT.

CTPD

ENG. DEPT.

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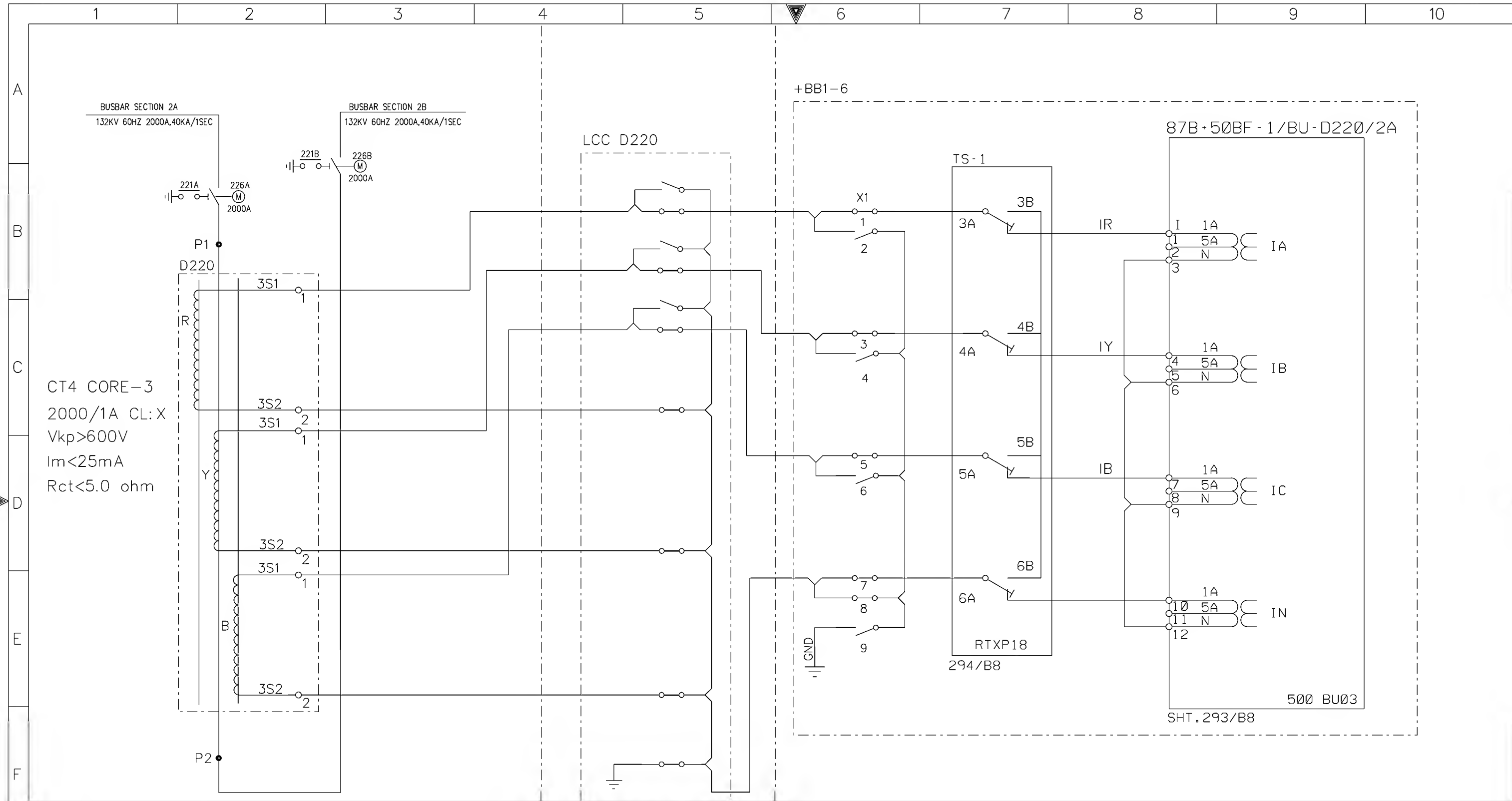
FOR APPROVAL

REV. NO.

DATE

DESCRIPTION

THIS DRAWING AND THE



AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY KVR

DATE STARTED 10.04.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

CURRENT TRANSFORMER INPUTS -87B+50BF-1/BU-D220/2A

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709 S-13656

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



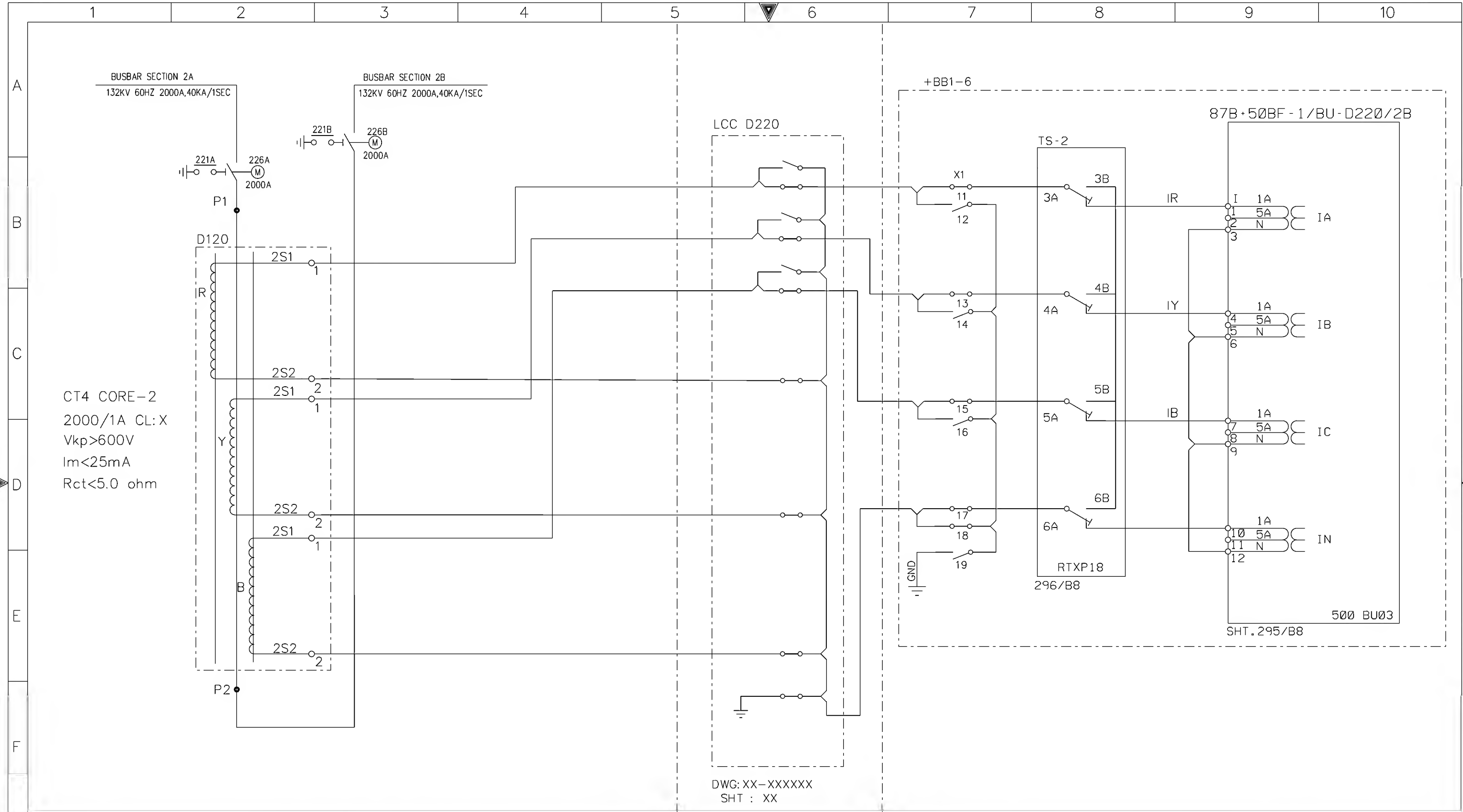
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323014	221	00

NG/D2-D (2012/01)

DMS

VECTOR

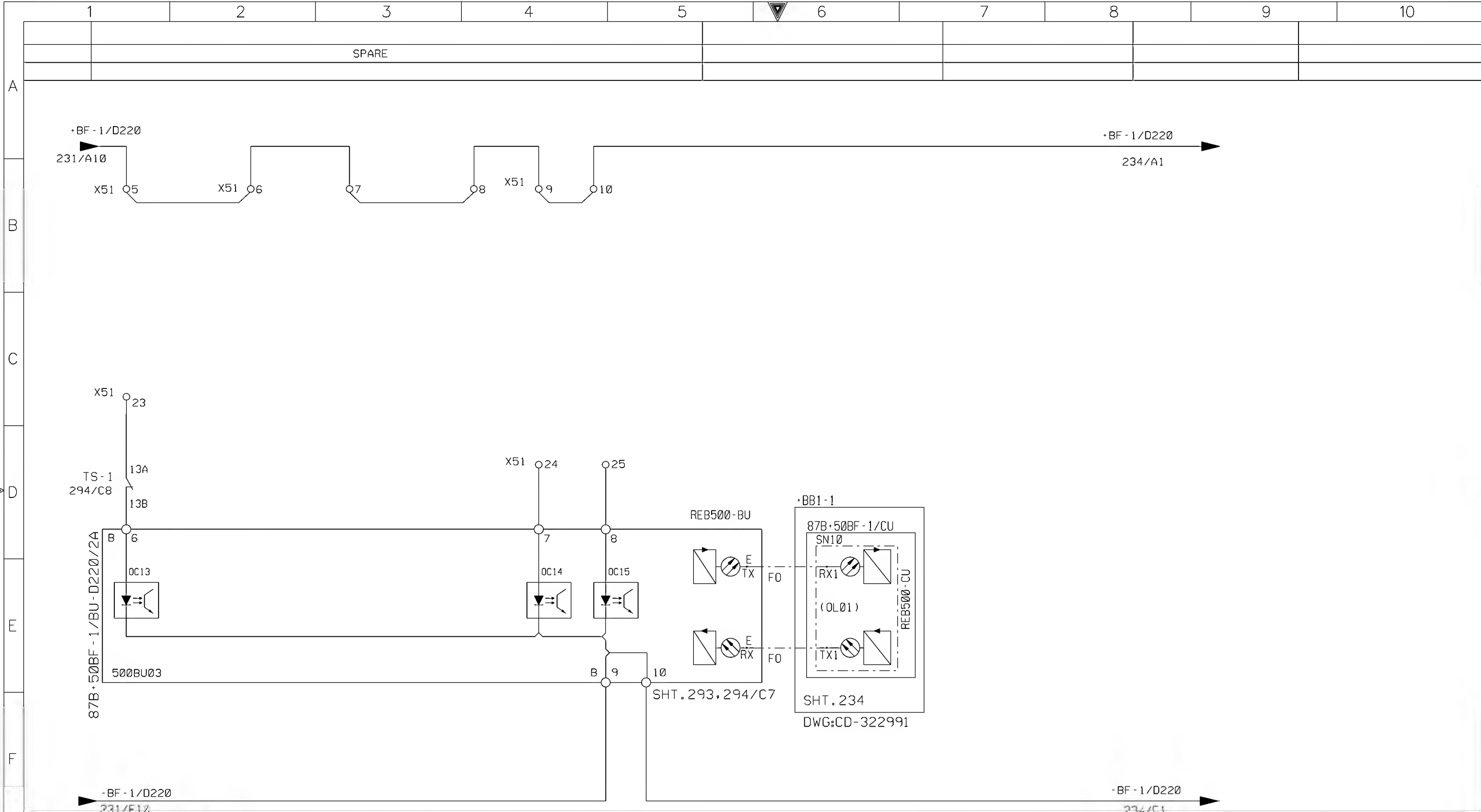
NGD200



AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
			DRAWN BY <u> RIZ </u> CHECKED BY <u> KVR </u>			
			DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____			
<u>00</u>	<u>13 14</u>	<u>FOR APPROVAL</u>	OPRG. DEPT. <u> CTPD </u> ENG. DEPT. <u> AUT-PSAC </u>			
REV. NO.	DATE	DESCRIPTION				

CURRENT TRANSFORMER INPUTS -87B+50BF-1/BU-D220/2B	
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء	
				National Grid SA	
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	
				SHT	CONT.
-	C421	CD-323014		222	231
				REV. NO.	
				00	



AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY KVR

DATE STARTED 10.04.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

87B+50BF-1/BU-D220/2A PROTECTION RELAY - BINARY INPUTS

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
			SHT	CONT.	
-	C421	CD-323014	232	234	00

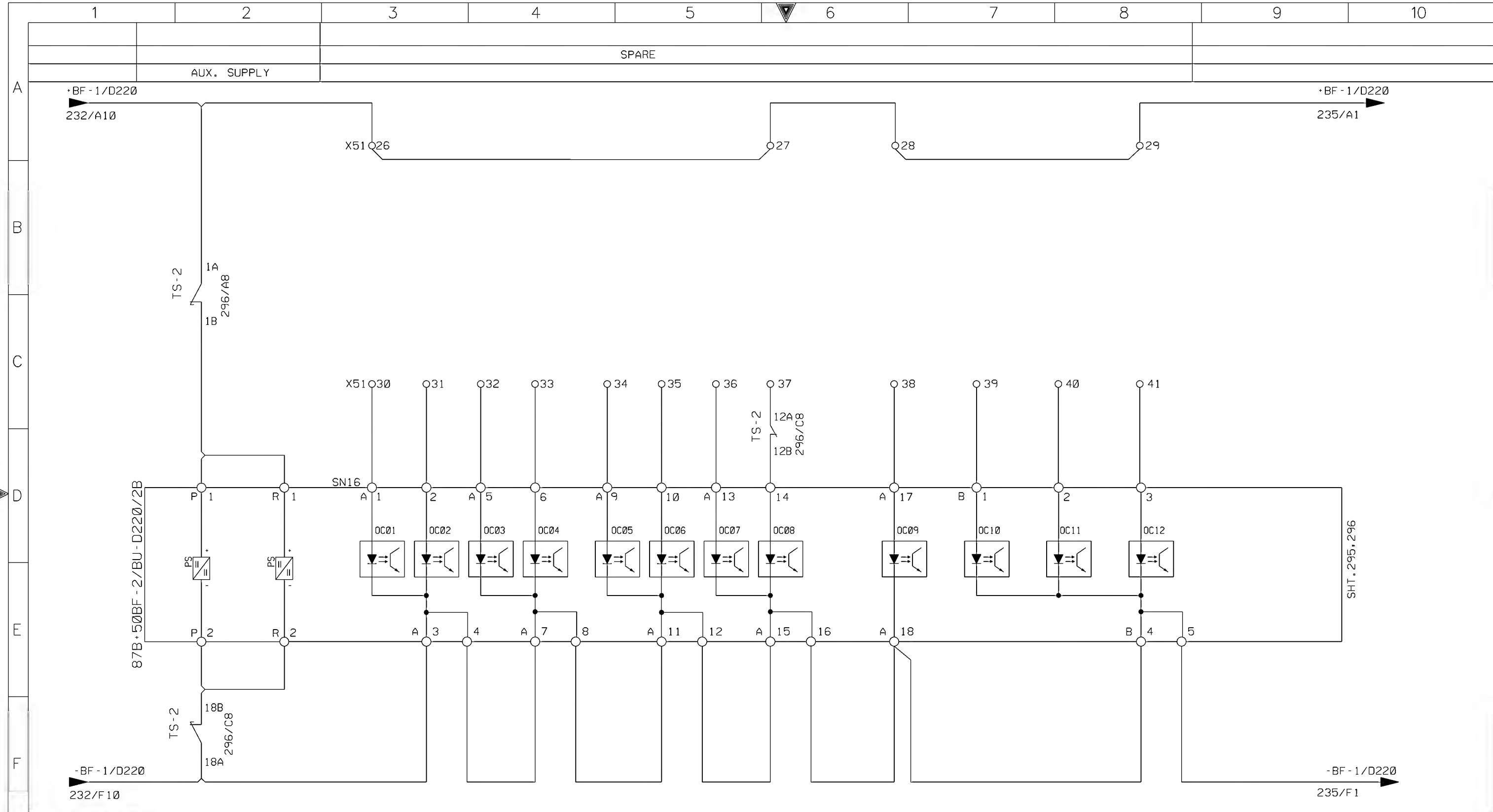
NG/D2-D (2012/01)

DMS

VECTOR

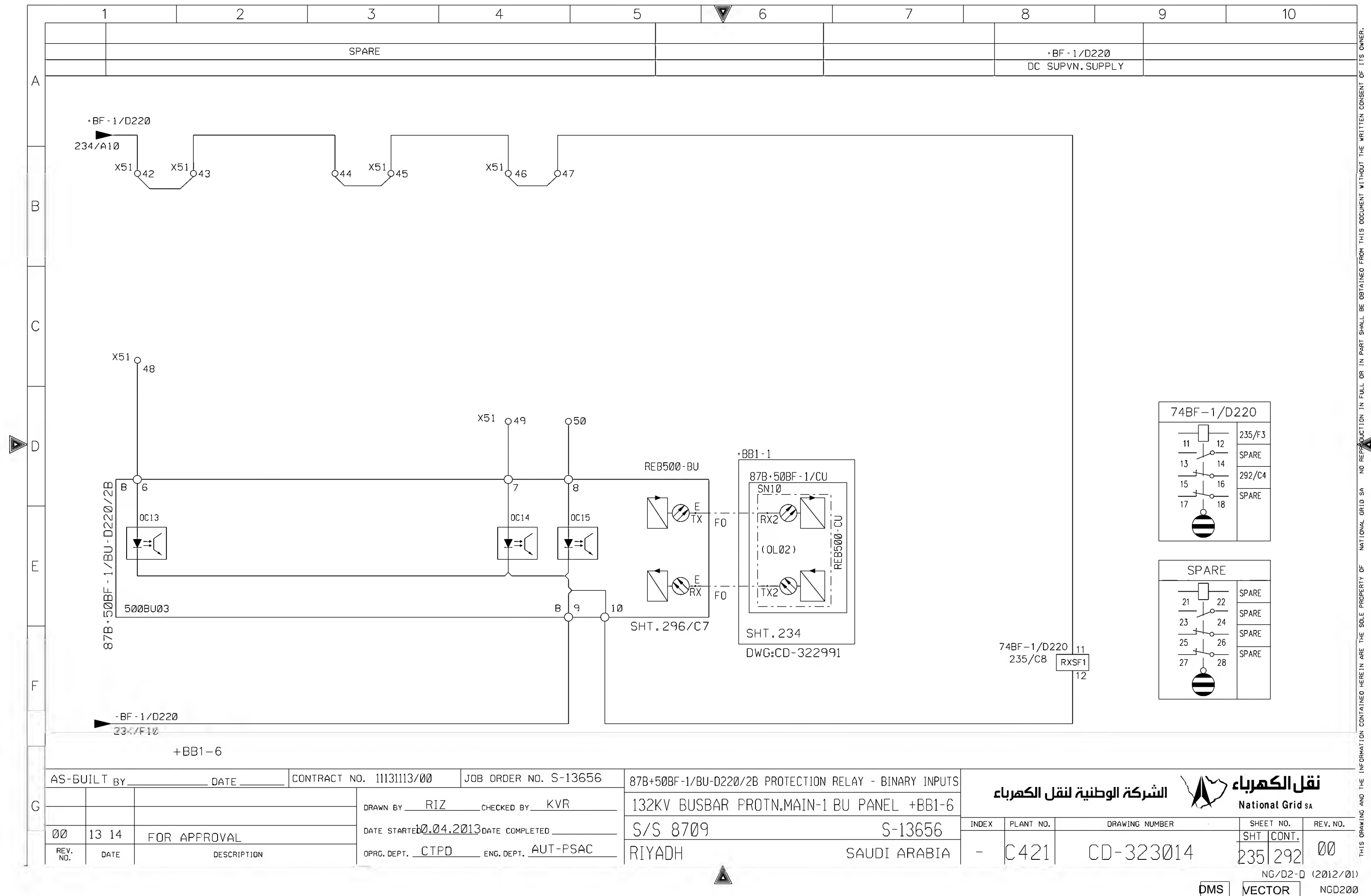
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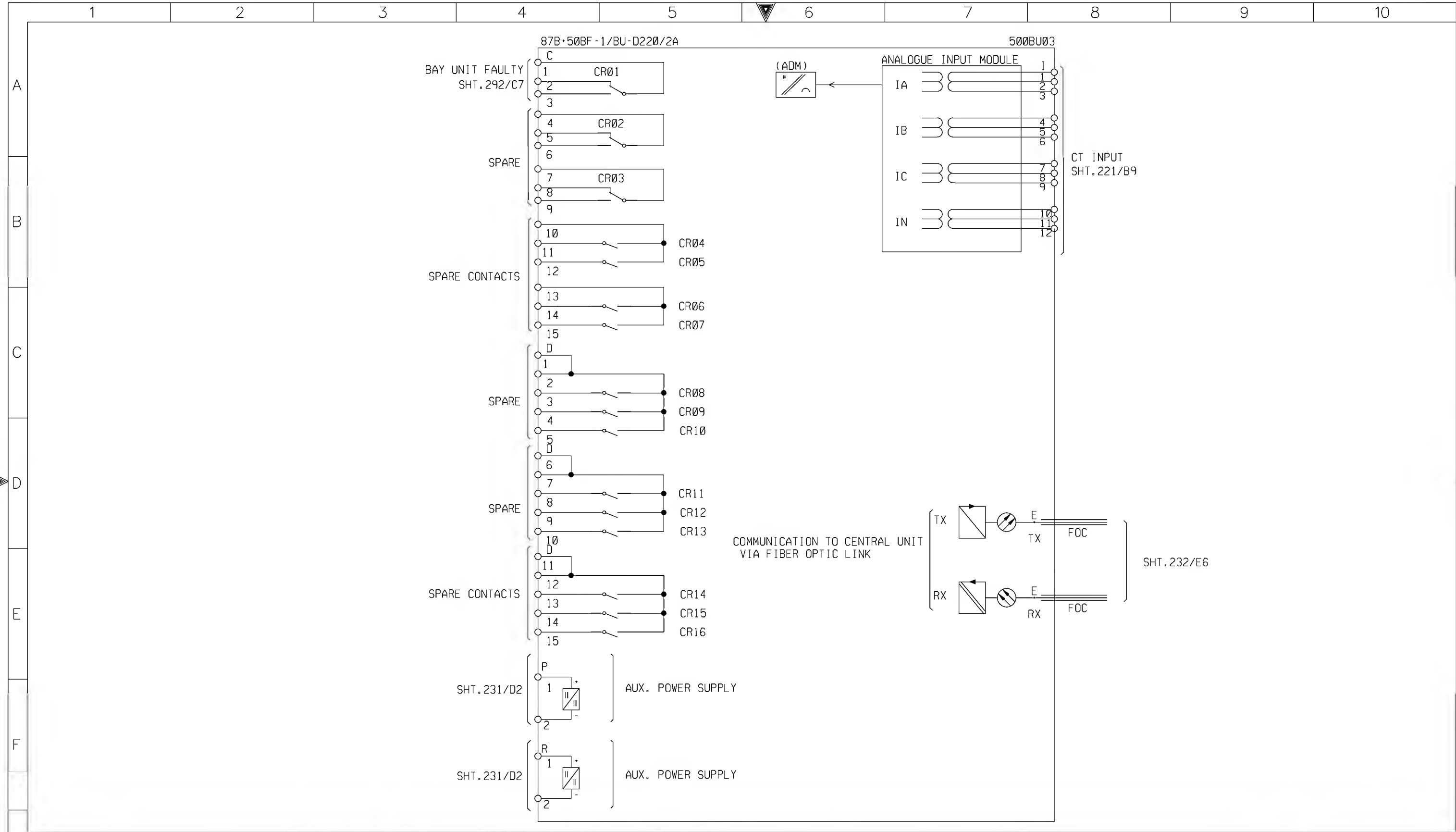
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+BB1-6								
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00			JOB ORDER NO. S-13656		
			DRAWN BY RIZ CHECKED BY KVR			87B+50BF-1/BU-D220/2B PROTECTION RELAY - BINARY INPUTS		
			DATE STARTED 10.04.2013 DATE COMPLETED _____			132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
00 13 14 FOR APPROVAL			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC			S/S 8709 S-13656		
REV. NO. DATE DESCRIPTION						RIYADH SAUDI ARABIA		

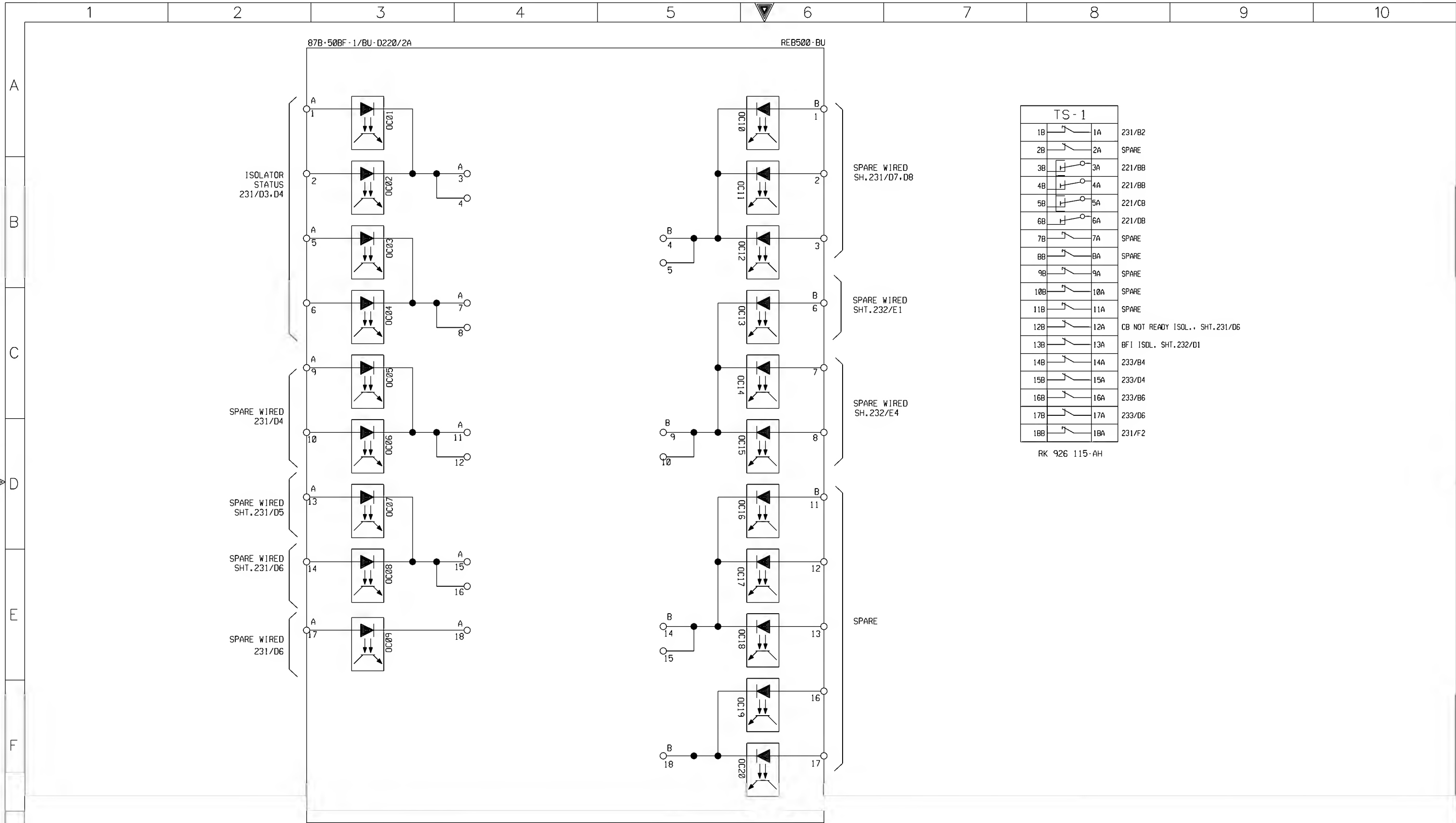
الشركة الوطنية لنقل الكهرباء		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.
-	C421	CD-323014	234 235
			REV. NO.
			00





AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE-87B+50BF-1/BU-D220/2A		
			DRAWN BY RIZ		CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
			DATE STARTED 10.04.2013		DATE COMPLETED _____		S/S 8709 S-13656		
00 13 14 FOR APPROVAL			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		
REV. NO.	DATE	DESCRIPTION					INDEX	PLANT NO.	DRAWING NUMBER
							-	C421	CD-323014

SHEET NO.		REV. NO.
SHT	CONT.	
293	294	00



TS - 1			
1B	1A	231/B2	
2B	2A	SPARE	
3B	3A	221/BB	
4B	4A	221/BB	
5B	5A	221/CB	
6B	6A	221/DB	
7B	7A	SPARE	
8B	8A	SPARE	
9B	9A	SPARE	
10B	10A	SPARE	
11B	11A	SPARE	
12B	12A	CB NOT READY ISOL., SHT. 231/D6	
13B	13A	BF I ISOL., SHT. 232/D1	
14B	14A	233/B4	
15B	15A	233/D4	
16B	16A	233/B6	
17B	17A	233/D6	
18B	18A	231/F2	

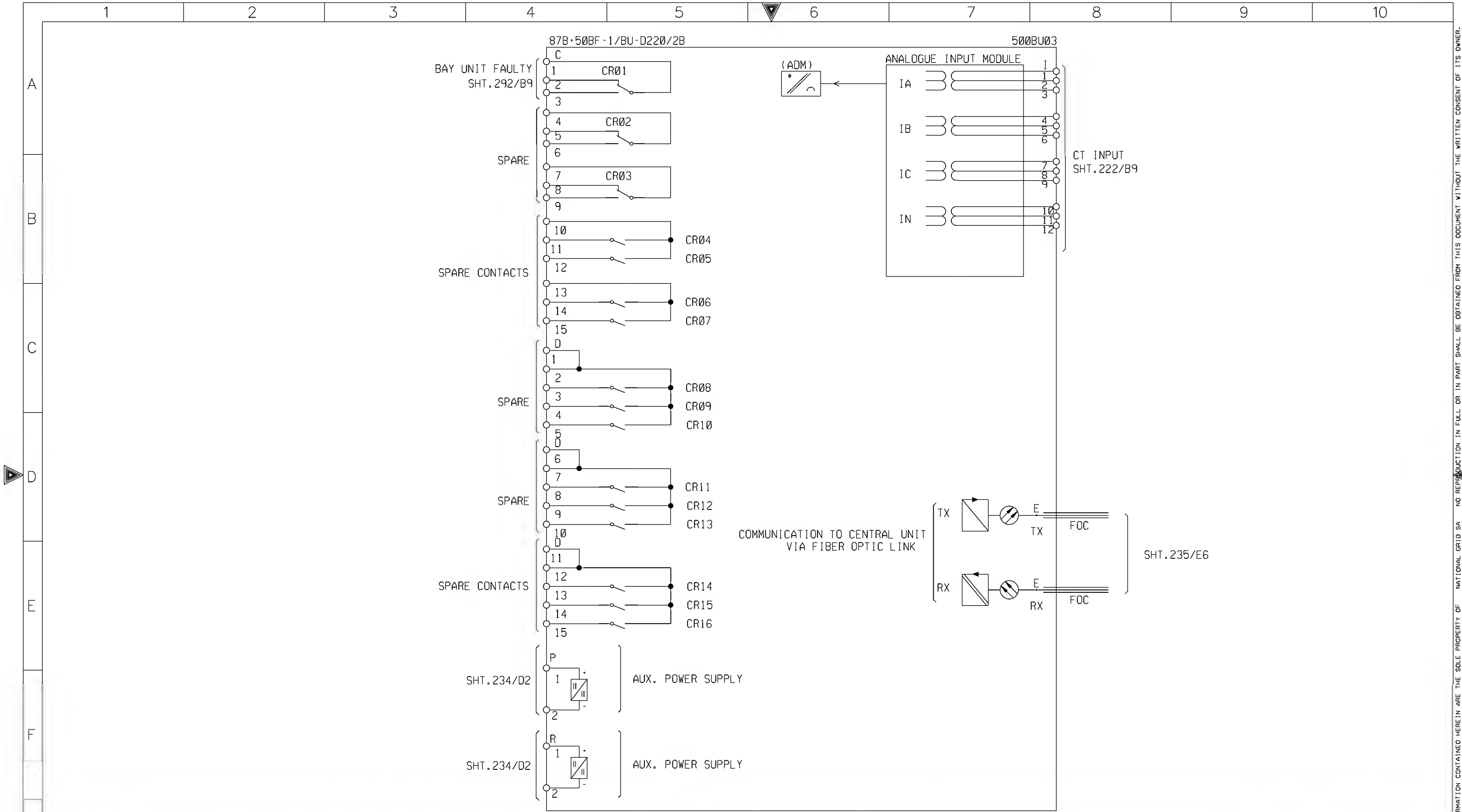
RK 926 115-AH

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

			DRAWN BY RIZ	CHECKED BY KVR
			DATE STARTED 10.04.2013	DATE COMPLETED _____
			OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC
00	13 14	FOR APPROVAL		
REV. NO.	DATE	DESCRIPTION		

BLOCK REFERENCE-87B+50BF-1/BU-D220/2A
132KV BUSBAR PROTN. MAIN-1 BU PANEL +BB1-6
S/S 8709 S-13656
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء National Grid sa					
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
-	C421	CD-323014	SHT	CONT.	00
			294	295	



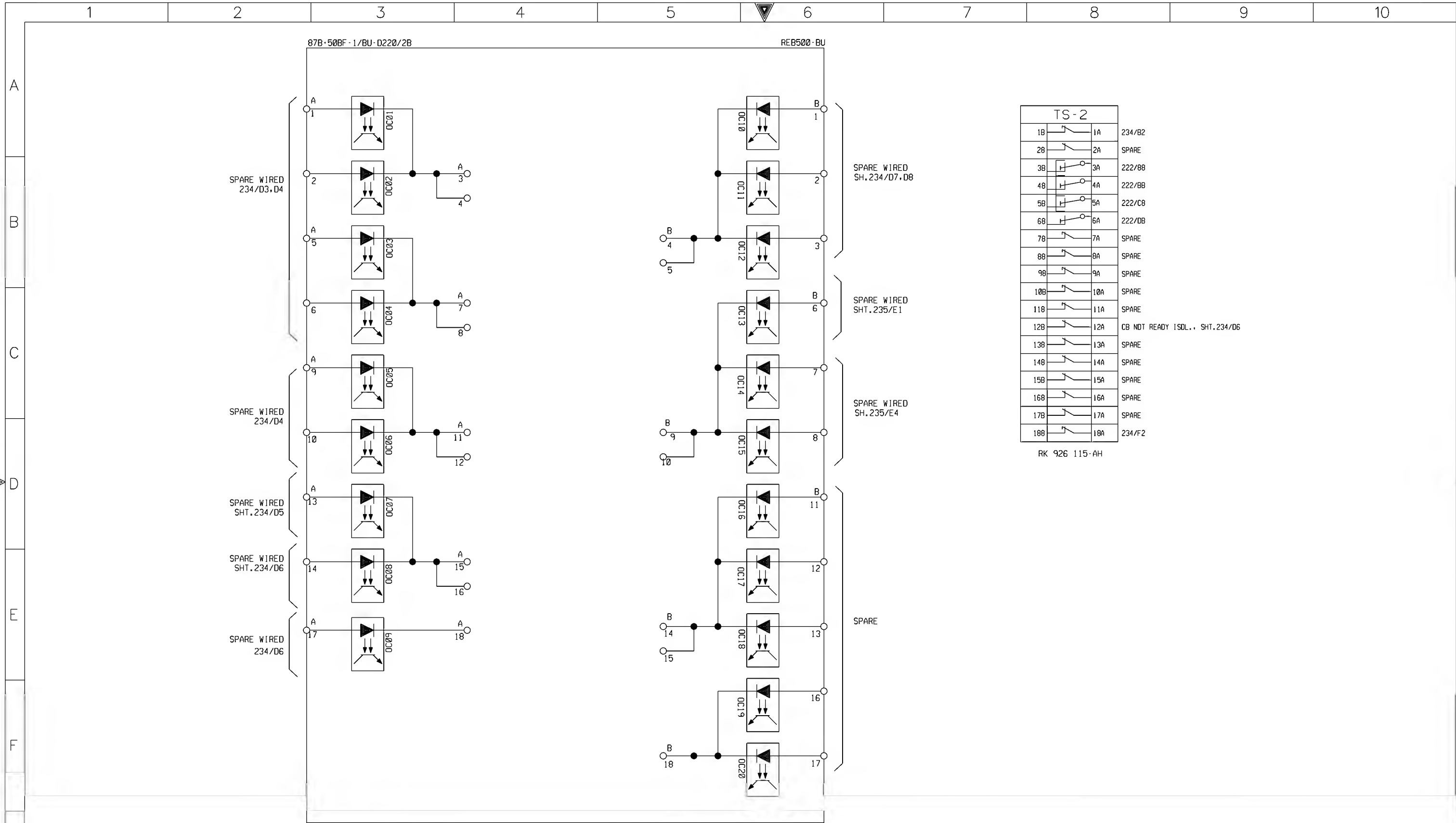
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE-87B+50BF-1/BU-D220/2B		
			DRAWN BY RIZ		CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
			DATE STARTED 10.04.2013		DATE COMPLETED _____		S/S 8709 S-13656		
00 13 14 FOR APPROVAL			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		
REV. NO.	DATE	DESCRIPTION					INDEX	PLANT NO.	DRAWING NUMBER
							-	C421	CD-323014

SHEET NO.		REV. NO.
SHT	CONT.	
295	296	00



الشركة الوطنية لنقل الكهرباء

SHEET NO.		REV. NO.
SHT	CONT.	
295	296	00



TS-2			
1B	1A	234/B2	
2B	2A	SPARE	
3B	3A	222/BB	
4B	4A	222/BB	
5B	5A	222/CB	
6B	6A	222/DB	
7B	7A	SPARE	
8B	8A	SPARE	
9B	9A	SPARE	
10B	10A	SPARE	
11B	11A	SPARE	
12B	12A	CB NOT READY ISDL., SHT.234/D6	
13B	13A	SPARE	
14B	14A	SPARE	
15B	15A	SPARE	
16B	16A	SPARE	
17B	17A	SPARE	
18B	18A	234/F2	
RK 926 115-AH			

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>	
			DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____	
00 13 14 FOR APPROVAL			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>	
REV. NO.	DATE	DESCRIPTION		

BLOCK REFERENCE-87B+50BF-1/BU-D220/2B
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6
S/S 8709 S-13656
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء National Grid sa					
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
-	C421	CD-323014	SHT	CONT.	00
			296	301	

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										

REFERENCE
221/B7
221/B7
221/C7
221/C7
221/C7
221/C7
221/C7
221/D7
221/D7
SPARE
222/B7
222/B7
222/C7
222/C7
222/C7
222/C7
222/D7
222/D7
SPARE

X1 CT CKT.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

REFERENCE
231/A3
231/A5
231/A6
231/A8
232/A1
232/A2
232/A3
232/A4
232/A4
231/C3
231/C3
231/C4
231/C4
231/C4
231/C5
231/C5
231/C6
231/C6
231/C7
231/C8
231/C8
232/D1
232/C1
232/C3
234/A3
234/A5
234/A6
234/A8
235/C1
235/C2
235/C2
235/C3
235/C4
235/C4
234/C5
234/C5
234/C7
234/C7
234/C8

X51 CON & PROTN CKTS.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

REFERENCE
234/C8
235/B1
235/B2
235/B4
235/B3
235/B4
235/B5
235/C1
235/C4
235/C5
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE

X51 CON & PROTN CKTS.
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

REFERENCE
212/E5
212/E5
292/E4
292/E5
292/E7
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE

X61 ALM. CKT.
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

REFERENCE
211/A3
211/A7
211/A3
211/A7
211/B3
211/B7
211/B3
211/B7
SPARE
SPARE

X3 AC CKT.
1
2
3
4
5
6
7
8
9
10

REFERENCE
211/C3
211/D3
211/D3
211/D3
SPARE

XTJ T.JACK
1
2
3
4
5

REFERENCE
216/B3
216/B3
216/D3
216/D3
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE

X4 DC CKTS.
1
2
3
4
5
6
7
8
9
10

REFERENCE
211/E6
211/F6
SPARE

XSH SPACE HEATER
1
2
3

REFERENCE
212/C5
212/C5
292/E3
SPARE
SPARE

X6 ALM. CKT.
1
2
3
4
5

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
			DRAWN BY RIZ	CHECKED BY KVR
			DATE STARTED 04.2013	DATE COMPLETED _____
00	13 14	FOR APPROVAL	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC
REV. NO.	DATE	DESCRIPTION		

TERMINAL BLOCKS PANEL +BB1-6	
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء National Grid sa				
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323014	SHT CONT.	00
			301 NIL	